Department of Defense

Office of the Deputy Under Secretary of Defense
(Environmental Security)

Relative Risk Site Evaluation Quality Assurance Plan

A Resource for Remedial Project Managers and Other Interested Parties

Implementing the Relative Risk Concept in
Management Guidance for the Execution of the
Defense Environmental Restoration Program (DERP)

Summer 1997

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1.0 INTRODUCTION

The goal of quality assurance (QA) for relative risk site evaluations[1] is to provide assurance that evaluations are being performed throughout the Department of Defense (DoD) in accordance with the procedures and requirements established in the Relative Risk Site Evaluation Primer.[2] Development and implementation of the QA plan is essential in order to establish and preserve the credibility of the relative risk site evaluations. It is critical that there be a high degree of confidence in the relative risk process and the results it produces because the data are used as key elements to identify and justify requirements and to demonstrate progress.

This quality assurance plan defines quality assurance expectations and objectives for relative risk site evaluation data; establishes standard process validation and quality assurance reports; and fosters communication, information transfer, and quality improvement across the DoD Components for the relative risk site evaluation process.

2.0 QUALITY ASSURANCE OBJECTIVES

Quality assurance objectives include consistency, auditibility, accountability, and credibility of relative risk site evaluation data. These objectives have both inter- and intra-Component applicability.

- Consistency - agreement or logical coherence and comparability among the DoD Components' data collection methodologies, application of the Primer, and use and reporting of the data.

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[1] For Formerly Used Defense Sites (FUDS) relative risk site evaluation means relative risk project evaluation and installation means FUDS property.

[2] References to the Primer mean the most current version of the Relative Risk Site Evaluation Primer applicable to the semiannual submissions of the relative risk site evaluation data. The Primer is intended to be updated on an as needed basis. Consideration will be given to updating Appendix B of the Primer annually or as new information becomes available.

- Auditability - ability to reasonably and readily examine and verify relative risk site evaluation (RRSE) data and its basis. Data must stand up to internal and external scrutiny to support the intended purpose of the RRSE process. Documentation and trackability (that is, the ability to reproduce and justify site information and the results of the relative risk evaluation) are essential to meeting this objective and maintaining the integrity of the process.

- Accountability - establishment of individual (for example, Remedial Project Manager), command, and DoD Component accountability for the RRSE process to include the documentation and reproducibility of the data. Accountability involves an expectation and acceptance of ownership for the data and the integrity of the process.

- Credibility - confidence, of both internal and external stakeholders, in RRSE data and the integrity of the RRSE process.

3.0 QUALITY ASSURANCE ROLES AND RESPONSIBILITIES

Organizational groups or entities that have crucial roles and responsibilities for the quality assurance of RRSE include the Office of the Deputy Under Secretary of Defense for Environmental Security [ODUSD(ES)], the DoD Components, the chain-of-command, and the Remedial Project Manager (RPM). The chain-of-command includes all elements of command between the DoD Component Headquarters and the RPM.

3.1 Office of the Deputy Under Secretary of Defense (Environmental Security)

ODUSD(ES), using standard reports described in Section 4.0, will compare RRSE data across the DoD Components for consistency with the Primer. Inconsistencies among the Components will be delineated to the Components for explanation and correction.

3.2 DoD Components

The DoD Components shall implement this quality assurance plan and take any necessary corrective actions. The DoD Components shall cionsolidate RPM, stakeholder, or other input regarding adequacy of the current methodology and forward appropriate comments and irecommendations for improvement of the Primer through that Component’s chain-of-command.

3.3 Chain-of-Command

The chain-of-command, from the RPM to the DoD Component headquarters, shall provide oversight for the RRSE process and periodically review data provided by the RPM to evaluate adequacy of site evaluations and the integrity of the process. Each level of the chain-of-command shall routinely review relative risk data and evaluation results to ensure that evaluations are consistent with the Primer.

3.4 Remedial Project Manager

The RPM has the foremost responsibility for the quality of relative risk site evaluation data. RPM input of accurate and defensible data is the most crucial element in a quality RRSE program. The RPM shall review the RRSE data for which the RPM is responsible and ensure that:

- Selected contaminants of concern and analytical concentration data are current and representative of conditions caused by the site being evaluated

- Regulators and public stakeholders have been solicited for any appropriate empirical evidence that they may have, and that empirical evidence provided by them has been considered during application of the Primer in selecting the most appropriate evaluations of receptor factor and migration pathway factor

- Any conditions or data which are important site considerations but which cannot be adequately addressed in accordance with the current Primer are raised through the chain-of-command

4.0 DATA VERIFICATION AND REPORTING

In order that RRSEs be verifiable by the QA process, uniform procedures must be used in accordance with the Primer. All RRSEs used by program managers to aid in determining the sequence of project execution must be derived from reliable and accurate data.

4.1 Data Reporting Requirements

The data elements in Table 1 are the minimum information requirements that must be verified in order to properly and completely submit relative risk information. The data elements on RRSEs must be submitted in accordance with the DERP/BRAC Data Collection Overview (Appendix A).

Table 1
Relative Risk Data Requiring Verification

Contaminant Level	
Site Name	Comparison Value
FFID/FUDS Property Number	Ratio
Contaminant	CAS Number
Maximum Concentration	Media
Unit of Measure	
Media Level	
FFID/FUDS Property Number	Migration Pathway Factor (MPF)
Site Name	Receptor Factor (RF)
Media	Media Relative Risk Rating
Contaminant Hazard Factor (CHF)	Ratio Total
Site Level	
FFID/FUDS Property Number	Site Name
Installation Name	Site Relative Risk Category

* All data elements listed are from the Data Element Dictionary (See Appendix B)

4.2 Data Quality Indicators

There are several factors that should be evaluated when reviewing RRSEs. Data sources used for RRSEs, such as completed site inspections or remedial investigations, are subject to their own established QA/QC process. This QA plan assumes such data are reliable. Media without reliable analytical data should be designated as "Not Evaluated;" that data will be excluded from further use in determining a site's relative risk category.

The contaminants to be evaluated in determining a CHF for a medium are included on the list in Appendix B of the Primer. Each contaminant selected for evaluation must have reliable analytical data from the most recent representative sampling and analysis. The data should be compared to background concentration ranges to ensure background data is not included. Of particular concern are metals, nitrates, nitrites, or radiation. Additionally, the use of proper units of measure when conducting CHF evaluations is important to maintain the validity of those evaluations.

CHF, MPF, and RF ratings that are not in accord with their definitions from the Primer are not valid. The correct use of these ratings is crucial to ensure that official reports or data concerning the site or media are supportable. Some best professional judgment may be necessary when determining the MPF and RF; however, it should be used primarily to complement sound engineering and scientific work.

4.3 Process Reviews and Quality Assurance Reports

DoD Components shall perform reviews of the process used to derive RRSEs. These process reviews are in addition to the quality assurance reports to be prepared to aid in verification of RRSE data.

4.3.1 Process Reviews

Recommended review practices are listed below:

- Compare CAS numbers to those in Appendix B of the Primer
- Compare risk-based concentrations used in CHF computations to those in the Primer
- Test arithmetic computations to ensure acceptable accuracy
- Review RRSEs to avoid or eliminate duplicate entries
- Test, as feasible, to validate data entry to ensure the sum of contaminant concentrations in a single media at a site does not exceed unity or other logical limits

- Review RRSEs for any installation where the CHF ratios for a given relative risk site category are disproportionate to those of the Component as a whole

- Review RRSEs for any installation where there is a disproportionate number of sites with a relative risk site category of High that is based on minimal CHF ratios

- Review any relative risk site categories of High for underground storage tanks which are based on soil contamination

- Review any relative risk site categories of High which are based on contaminants which are generally known to also be naturally occurring elements in that region

- Review sites with a RRSE of High where the primary contaminants of concern are rare isomers.

- Review evaluated sites with a mismatch between the reported site relative risk category and the relative risk rating of the medium that should be driving the site relative risk category

- Review evaluated sites where all contaminants in the medium driving the site relative risk category have CHF ratios less than 0.2, and the CHF total is greater than or equal to 2.0

4.3.2 Quality Assurance Reports

Once all RRSEs are completed or sites are classified as "Not Required" or "Response Complete," quality assurance reports can be prepared at an installation, command, DoD Component, or ODUSD(ES)-level to determine the status of RRSEs throughout the program. Reports will be created as a part of the relative risk process to establish that the CHF, MPF, and RF have been evaluated properly and that they then are used appropriately to determine the relative risk category of a site. The following is a list of exception and error reports that will be prepared to determine the validity of RRSEs. Additional reports not listed below may also be prepared as necessary, as part of the verification process.

All reports must be based on data that is valid. Data that is used to create one or more reports includes:

- Installation Name
- FFID
- Site name
- All media level data for reports that include more detailed information than the site relative risk category

The following criteria are used for the queries necessary to create the exception and error reports listed below.

Exception Reports - These reports may indicate that the Primer is not being used as intended or the conditions in these reports, although valid in the Primer, are suspect. Identified exceptions can help focus quality assurance reviews.

1) Installations with all evaluated sites in the High relative risk category - Installations identified in this report raise concern and warrant detailed review to determine whether the Primer has been properly applied.

- All sites are not remedy in-place (RIP) or response complete (RC)
- Five or more sites remain
- All site risk categories are scored High

2) High risk sites with a CHF ratio less than 2.0 for the medium driving the site relative risk - A significant number of sites in this category raises concern and warrants detailed review. Sites identified in this report require submittal of validated relative risk site evaluation rationales. Sites that lack supporting rationale will not be accepted and should be classified as Not Evaluated.

- Overall site risk is High
- All driving media CHF ratios are less than 2.0
- All driving media CHF ratios are greater than or equal to 0.005

3) Installations with multiple sites that have identical CHFs for a particular medium - This report identifies where data may have been used for a site for which it was not intended.

- More than one site with identical CHFs in a particular medium

Error Reports - These reports will identify where data is not being used in accordance with the Primer.

1) **List of sites that are not included in the component's data submission to DoD. -** This report should ensure that only valid sites are considered.

   - Site relative risk category is High, Medium, or Low
   - No matching site name in the DoD database

2) **High and Medium risk sites where the CHF ratio for the driving media is less than 0.005. -** This report implements Section 3.3 of the Primer (use reliable data, do not use numbers that are less than detection limits, and do not use numbers detected within background ranges). Sites identified in this report shall be classified as Low relative risk.

   - Site relative risk category is High or Medium
   - Media relative risk is identical to the site relative risk
   - Media CHF is less than 0.005

3) **Evaluated sites with a reported Remedy In Place or Response Complete -** By definition, if a site has an actual remedy in place or response complete date then the site should be designated as RRSE Not Required.

   - Site relative risk category is High, Medium, or Low
   - Site has an actual RIP or actual RC date

4) **Evaluated sites with no backup media records -** For a RRSE to be considered valid the site must have media records.

   - Site relative risk category is High, Medium, or Low
   - No media records are associated with the site

5) **Evaluated sites with no backup contaminant records -** For a RRSE to be considered valid the media records must have contaminant records.

   - Site relative risk category is High, Medium, or Low
   - Media risk is High, Medium, or Low
   - No contaminant records are associated with one or more driving medium at the site

5.0 QUALITY ASSURANCE MANAGEMENT

Effective management of the RRSE process and evaluation results requires timely assessment and review. Effective management also requires interaction and feedback between organizational elements of a DoD Component, across DoD Components, and with ODUSD(ES) and the DoD Relative Risk Site Evaluation Work Group. Effective interaction and feedback requires information transfer, and the integrity of the process requires documentation and reporting. DoD Components will exchange information with other Components and ODUSD(ES) through the DoD Relative Risk Site Evaluation Work Group.

5.1 Performance and Systems Reviews

DoD Components will verify performance at the organizational level where RRSEs are being conducted as well as verify consistency across organizational elements to ensure that the integrity of the process is being maintained. Performance and systems (process) reviews will be conducted for RRSEs and the RRSE process in order to verify that evaluations are being performed in accordance with the procedures and requirements established in the Primer and that the program's quality assurance objectives are being attained.

- Performance reviews concern both a quantitative and qualitative evaluation of the actual results of one or more RRSEs. Generally, performance reviews will look at a representative sample of results to verify that the results can be reasonably duplicated and justified.

- Systems or process reviews concern the qualitative evaluation of all elements of the RRSE process, including management, technical personnel, training, record keeping, and reporting.

Summary reports of lessons learned and systemic problems identified during such reviews should be prepared and disseminated to all appropriate organizational elements as an information and process improvement tool.

Quality assurance across DoD Components will be maintained through the RRSE verification and reporting process described in Section 4.0 and through review by the DoD Relative Risk Site Evaluation Work Group.

5.2 Corrective Action

Components will address routine and non-routine corrective actions identified both during and outside the conduct of performance and systems reviews. Components also will ensure that issues identified during or outside a formal review that require further resolution and guidance, and that may affect or be of interest to other DoD Components, are disseminated for appropriate consideration and action. For example, organizations conducting RRSEs may identify technical or process issues that need to be resolved at higher organizational levels or DoD-wide. Such issues must be sufficiently documented and raised to the appropriate levels (typically through the DoD Relative Risk Site Evaluation Work Group) in a direct, consistent, and timely manner.

The identification and resolution of problems will have limited benefit if solutions and lessons learned are not shared across DoD. The corrective action process is not complete until the problem has been solved effectively and permanently. Again, it is essential that summary reviews which include lessons learned and systemic issues and concerns are disseminated to all appropriate organizational elements, especially the DoD Relative Risk Site Evaluation Work Group, as an information and process improvement tool**.**

APPENDIX A

DERP/BRAC DATA COLLECTION OVERVIEW[1,2]

Information Requirements	Requested by	Information Submittal Schedule				Information Use
		1st QTR	2nd QTR	3rd QTR	4th QTR	
Operating/FUDS/closing installation site status	DUSD(ES)	√		√		· Annual Report to Congress · MOMs that support DPG goals · IPR
Program Objective Memorandum (POM)	DPA&E DUSD(ES)			√		· Program review · IPR · Establish budget targets
Relative risk site data (ERA and BRAC)[3]	ODC(P/B) DPA&E DUSD(ES)	√		√		· Annual Report to Congress · MOMs that support DPG goals · Support program (POM) and budget reviews · IPR
Bottom-up cost estimate	ODC(P/B) DPA&E DUSD(ES)			√		· Annual Report to Congress · Support program (POM) and budget reviews · IPR
ERA budget formats completed[3]	ODC(P/B) DUSD(ES)		√		√	· Annual Report to Congress · Budget estimate submission for budget review · IPR · President's Budget
BRAC budget formats completed	ODC(P/B) ASD(ES) DUSD(ES)		√		√	· Annual Report to Congress · Budget estimate submission for budget review · IPR · President's Budget
ERA funding status[3] (DFAS available monthly)	ODC(P/B) DUSD(ES)	√	√	√	√	· Appropriations/obligations/outlays for IPR
BRAC funding status (DFAS available monthly)	ODC(P/B) DUSD(ES)	√	√	√	√	· Appropriations/obligations/outlays for IPR
Issues, concerns and initiatives	DUSD(ES)	√	√	√	√	· Annual Report to Congress · IPR · Program management
MOMs/PMIs	ODC(P/B) DPA&E DUSD(ES)	√		√		· Annual Report to Congress · IPR · POM and budget submissions · Program management · Support DPG goals

Notes: [1] The data management information system will be updated semiannually
[2] IPRs will be conducted semiannually
[3] ERA refers to Military Department Environmental Restoration Accounts

APPENDIX B

RESTORATION MANAGEMENT INFORMATION SYSTEM (RMIS)
DATA ELEMENT DICTIONARY

RMIS--Installation Identification Table

FIELD NAME	TYPE	SIZE	DESCRIPTION
Installation Name (instname)	CHAR	40	The name given to a group of facilities or Formerly Used Defense Sites (FUDS) located in the same area that support particular DoD missions and functions. A facility is a physical entity, used and maintained by a Component of the Department of Defense (DoD) consisting of one or more of the following types of real property: a building; a structure; a utility system; some types of equipment; and lands, pavements, improvements, and appurtenances thereto. List location first (Pensacola PWC rather than PWC Pensacola).
FFID (ffid)	CHAR	12	The federal facility identification number is a unique identifier, assigned to an installation in RMIS. This 12-character, aggregate string is used in RMIS as a key field for each data table and is used to track cleanup at specific installations. The FFID data string is composed of four fields in the following order: 1) The **state/territory/political unit** alphanumeric code that identifies the state or territory in which the installation or site is located. This code occupies the first characters of the FFID string and usually consists of the standard U.S. Post Office abbreviation. 2) The **EPA Region number** code that identifies the EPA Region in which the installation or site is located, or the Region administratively responsible for conducting or overseeing response activity at the site. This code occupies the third character of the FFID string. 3) The **Service/agency component and major command code** that uniquely identifies the Service or agency that has primary responsibility for an installation or site. This code occupies the next four characters in the FFID string. Service — Code U.S. Army — 21XX Defense Nuclear Agency — 9714 U.S. Air Force — 57XX Defense Logistics Agency — 9715 U.S. Navy — 17XX Formerly Used Defense Sites — 9799 4) The **property number,** assigned by the General Services Administration (GSA) for an installation. This code occupies the final five characters of the FFID string.
Command (command)	CHAR	5	Codes assigned to major subdivisions of the Services that are assigned major parts of a component's missions and directly subordinate to their respective headquarters.
Mailing Address (mailadd)	CHAR	60	The office mailing address for the installation's Defense Environmental Restoration Program point of contact. For Formerly Used Defense Sites (FUDS), this is the responsible U.S. Army Corps of Engineers district point of contact.
County (county)	CHAR	3	The common postal abbreviation of the county or parish in which the predominant operations of the host installation are located.

RMIS--Base Realiagnment and Closure (BRAC) Information Table

FIELD NAME	TYPE	SIZE	DESCRIPTION
FFID (ffid)	CHAR	12	Unique federal facility identification number. Detailed definition of the FFID is on page 1.
BRAC Round (brac_round)	CHAR	4	A Roman numeral representing the round in which the installation was included in the BRAC program (" I" for the 1988 BRAC list, " II" for the 1990 BRAC list, " III" for the 1993 BRAC list, and " IV" for the 1995 BRAC list).
BRAC Type (brac_type)	CHAR	1	Code indicates the type of BRAC installation with regards to closure or realignment. (C = Closure; M = Major Realignment with property to be transferred out of DoD; R = Realignment other than major).
Date Scheduled Operational Closure (schedclos)	NUM	6	Date the final closure or realignment mission is scheduled to cease on the property (in the format " YYYYMM"—that is 199501 for January 1995).
Date Actual Operational Closure (opclose)	NUM	6	Date the final closure or realignment mission actually ceases on the property (in the format " YYYYMM"—that is 199501 for January 1995).
BCT Required (bct_reqd)	CHAR	1	Code indicates that a BRAC Cleanup Team (BCT) is required. (Y = Yes/N = No)
Date BCT Formed (bct_form)	NUM	6	The month and year (in the format " YYYYMM"—that is 199501 for January 1995) in which the BRAC Cleanup Team (BCT) was formed. The BCT is formed when all members have been appointed, including a DoD BRAC environmental coordinator (BEC), a member from the U.S. Environmental Protection Agency (EPA), and a member from the state regulatory agency.
EBS Required (ebs_reqd)	NUM	1	Code indicates that CERFA Environmental Baseline Survey (EBS) is required. (Y = Yes/N = No)
Date EBS Completed (ebs_comp)	NUM	6	The month and year (in the format " YYYYMM"—that is 199501 for January 1995) in which the CERFA Environmental Baseline Survey (EBS) was completed.
BCP Required (bcp_reqd)	CHAR	1	Code indicates that a BRAC Cleanup Plan is required. (Y = Yes/N = No)
Date BCP Completed (bcp_comp)	NUM	6	The month and year (in the format " YYYYMM"-that is 199501 for January 1995) in which the first BRAC Cleanup Plan was completed.
Total Acres (tot_acre)	NUM	10	Total acres on the installation's real property records.
Transfer Acres (trans_acre)	NUM	10	Total acres to be transferred out of DoD.
Transfer Fed (tranfed)	NUM	10	Total acres to be transferred out of DoD to another federal agency.
CERFA Clean Acres Proposed (cleanprop)	NUM	10	Total acres to be transferred out of DoD that DoD proposed to be classified as CERFA uncontaminated (Category 1 of environmental condition of property as described in the BCP Guidebook).
CERFA Clean Acres Concurred (cleancon)	NUM	10	Total acres to be transferred out of DoD for which EPA or state regulatory concurrence on CERFA-uncontaminated parcel determination was received.

FIELD NAME	TYPE	SIZE	DESCRIPTION
Acres Transferred Cumulative (cum_trans)	NUM	10	Total cumulative acres transferred to date.
Non-CERCLA Encumbrances (noncercla)	NUM	10	Total acres with non-CERCLA encumbrances (e.g., lead-based paint, asbestos, radon, PCB, UST, petroleum, UXO and RCRA closure).
Category 1 Acres (cat1)	NUM	10	Total acres to be transferred out of DoD that are classified in Category 1 of environmental condition of property (as described in the BCP Guidebook).
Category 2-4 Acres (cat24)	NUM	10	Total acres to be transferred out of DoD that are classified in Categories 2-4 of environmental condition of property (as described in the BCP Guidebook).
Category 5 and 6 Acres (cat56)	NUM	10	Total acres to be transferred out of DoD that are classified in Categories 5 and 6 of environmental condition of property (as described in the BCP Guidebook).
Category 7 Acres (cat7)	NUM	10	Total acres to be transferred out of DoD that are classified in Category 7 of environmental condition of property (as described in the BCP Guidebook).
Date Redevelopment Plan Completed (redv_comp)	NUM	6	The month and year (in the format "YYYYMM"-that is 199501 for January 1995) in which the initial community redevelopment plan was approved and submitted to the U.S. Department of Housing and Urban Development (HUD) and to the DoD Component.
FOST Acres Completed (ftacrcom)	NUM	10	The total number of acres associated with the number of FOST determinations completed during the current fiscal year.
FOSL Acres Completed (flacrcom)	NUM	10	The total number of acres associated with the number of FOSL determinations completed during the current fiscal year.

RMIS--Installation Narratives Table

FIELD NAME	TYPE	SIZE	DESCRIPTION
FFID (ffid)	CHAR	12	Unique federal facility identification number. Detailed definition of the FFID is on page 1.
Study Impact (simpact)	CHAR	4	Required under Superfund CERFA Section 120(3)(e)(1). Explain why study schedule is affected. TECH—Technical CONT—Contracting PERS—Personnel REG—Regulatory FUND—Funding
Interim Action Impact (iimpact)	CHAR	4	Required under Superfund CERFA Section 120(3)(e)(2). Explain why a specific interim action is affected. TECH—Technical CONT—Contracting PERS—Personnel REG—Regulatory FUND—Funding
Design Impact (dimpact)	CHAR	4	Required under Superfund CERFA Section l20(3)(e)(2). Explain why design schedule is affected. TECH—Technical CONT—Contracting PERS—Personnel REG—Regulatory FUND—Funding
Cleanup Impact (cimpact)	CHAR	4	Required under Superfund CERFA Section 120(3)(e)(3) Explain why cleanup schedule is affected. TECH—Technical CONT—Contracting PERS—Personnel REG—Regulatory FUND—Funding
Progress Made Narrative (made_1)	CHAR	254	Required under Superfund CERFA Section 120(3)(e)(5). A narrative description of the progress made during the current fiscal year. This narrative is used in the DERP annual report and should discuss the study and the cleanup activities started, underway, or completed during the year in relationship to the prior year fiscal obligations at the sites.
Progress Planned Narrative (plan_1)	CHAR	254	Required under Superfund CERFA Section 120(3)(e)(5). A narrative description of the progress planned for the next two fiscal years. This narrative should discuss study and cleanup activities planned for current year and those budgeted and planned for the following year. (See budget definitions on page 15.)

RMIS--Site Identification Table

FIELD NAME	TYPE	SIZE	DESCRIPTION
FFID (ffid)	CHAR	12	Unique federal facility identification number. Detailed definition of the FFID is on page 1.
Site Name (sitename)	CHAR	10	A unique name given to a distinct area on an installation containing one or more releases or threatened releases of hazardous substances treated as a discrete entity or consolidated grouping for response purposes. Includes any building, structure, impoundment, landfill, storage container, or other site or area where a hazardous substance was or has come to be located, including formerly used sites eligible for Building Demolition/Debris Removal (BDDR). There usually are multiple sites on an installation.
Site Type (sitetype)	CHAR	2	An identification that describes the type of site.

Site Type	Code	Site Type	Code
Aboveground Storage Tank	TA	Pesticide Shop	PS
Building Demolition/Debris Removal	DB	Pistol Range	PR
Burn Area	AB	Plating Shop	SP
Chemical Disposal	DC	POL (Petroleum, Oil, and Lubricant) Lines	PL
Contaminated Soil Piles	CD	Radioactive Waste Area	WR
Contaminated Groundwater	CG	Sewage Treatment Plant	ST
Contaminated Sediments	CS	Sewage Effluent Settling Ponds	EP
Contaminated Fill	CF	Small Arms Range	SR
Contaminated Buildings	CB	Soil Contamination After Tank Removal	SO
Dip Tank	DT	Spill Site Area	SS
Disposal Pit and Dry Well	DP	Storage Area	SA
Drainage Ditch	DD	Storm Drain	SD
Explosive Ordnance Disposal Area	XE	Surface Runoff	RS
Fire/Crash Training Area	AT	Surface Disposal Area	DA
Firing Range	FR	Surface Impoundment/Lagoon	SI
Incinerator	IN	Underground Tank Farm	TT
Industrial Discharge	ID	Underground Storage Tanks	TU
Landfill	LF	Unexploded Munitions and Ordnance Area	XU
Leach Field	FL	Washrack	RW
Maintenance Yard	MY	Waste Treatment Plant	WT
Mixed Waste Area	WM	Waste Lines	WL
Oil/Water Separator	OW		
Optical Shop	OS		

FIELD NAME	TYPE	SIZE	DESCRIPTION
On NPL (onnpl)	CHAR	1	Indication of National Priorities List (NPL) status (" Y" = yes, " N" = no, or " P" = proposed) of the site, as issued by EPA in accordance with the National Contingency Plan and CERCLA. The NPL, often referred to as the " Superfund list," is a compilation of sites that EPA has assigned priority according to EPA's determination of the urgency of need for long-term attention to the site.
NPL De-List Date (delistdate)	NUM	6	The month and year (in the " YYYYMM" format, that is, 199409 for September 1994) on which a site was removed from the NPL.
Estimated Remedy In-Place Date (est_rip)	NUM	6	Date final remedy is expected to be in place (in the format " YYYYMM"—that is, 199501 for January 1995); the phrase " remedy in place" means the construction of the final remedy has been completed and the remedy is functioning properly and performing as designed. To be entered for each site without an Actual Remedy In-Place date.
Actual Remedy In-Place Date (act_rip)	NUM	6	Date remedy was in place (in the format " YYYYMM"-that is, 199501 for January 1995); the phrase " remedy in place" means the construction of the final remedy has been completed and the remedy is functioning properly and performing as designed.
Estimated Response Complete Date (est_rc)	NUM	6	Date (in the format " YYYYMM"—that is, 199501 for January l995) the component expects the IRP process at the site to be complete. To be entered for each site without an Actual Response Complete date.
Actual Response Complete Date (act_rc)	NUM	6	Date (in the format " YYYYMM"—that is, 199501 for January 1995) the Component deems the IRP process at the site to be complete and has documented the decision, and, if required, regulatory requirement for notification or application for concurrence has occurred. (Enter the date in this field after the completion of the final remedial action.)

RMIS--Phase Cleanup Status Table

Note: Phase records should be entered for each phase at sites where planned, underway, or completed phases exist. Each planned phase should have an estimated start and end date. Each underway phase should have actual start date and an estimated end date. Completed phases should include actual start and end dates.

FIELD NAME	TYPE	SIZE	DESCRIPTION
FFID (ffid)	CHAR	12	Unique federal facility identification number. Detailed definition of the FFID is on page 1.
Site Name (sitename)	CHAR	10	Unique name given to a distinct area on an installation. Detailed definition of Site Name is on page 7.
Phase (phase)	CHAR	5	Code for phase of cleanup. See note above. Description — Code Preliminary Assessment — PA Site Inspection — SI Interim Remedial Action or Removal Action — IRA Remedial Investigation/ Feasibility Study — RI/FS Remedial Design — RD Remedial Action Construction (Formerly Remedial Action) — RA-C Remedial Action Operation (Formerly Operations and Maintenance) — RA-O Long-Term Monitoring — LTM
Status (status)	CHAR	1	Code of phase status: " F"—Planned for Future Action, " U"—Underway, or " C"—Action Completed. Phase status will be derived and validated from estimated and actual start and end dates. Note: This field is to be validated with actual start and end dates.
Estimated Start Date (esdate)	NUM	6	Estimated starting date of cleanup phase in " YYYYMM" format (that is, 199401 means January 1994). Entry required for each phase data field. See note above.
Estimated End Date (eedate)	NUM	6	Estimated ending date of cleanup phase in " YYYYYMM" format (that is, l99402 means February 1994). Entry required for each phase data field. See note above.
Actual Start Date (asdate)	NUM	6	Actual starting date of cleanup phase in " YYYYMM" format (that is, 199403 means March 1994). Entry required for each phase data field. See note above.
Actual End Date (aedate)	NUM	6	Actual ending date of cleanup phase in " YYYYMM" format (that is, 199406 means June 1994). Entry required for each phase data field. See note above.
Remedy Type (remedy)	CHAR	3	Code of remedial action technology type applicable to a site should be entered for each IRA and final RA no later than actual RI/FS end date. At NPL sites, code should be entered no later than actual RD start date.

Remedy	Code
Acid extraction	N16
Air stripping	F19
Air sparging	F14
Alternate water supply/water supply treatment	C1
Alternate habitat	P1
Bioreactors (ex situ)	F18
Bioremediation—in situ	H12
Bioremediation—in situ groundwater	F11
Bioremediation	H1
Bioventing	H11
Capping	I1
Carbon adsorption	F20
Chemical reduction/oxidation	N13
Composting	H16
Containment	I0
Controlled solid-phase bioremediation	H14
Dehalogenation	N14
Drainage controls	B1
Dual-phase extraction	F12
Ex situ soil treatment	N1
Fence or other site access control measures	A1
Free product recovery	F13
Fugitive dust cover/control	I3
Groundwater treatment	F1
Hot water/steam flushing	F15
Hydrofracturing (enhancement)	F17
In situ soil treatment	M1
Incineration	N18
Incineration	D1
Institutional controls	A0
Landfarming	H15
Long-term monitoring	G1
Natural Attenuation	F3
Other	L1
Passive treatment wells	F16
Pneumatic fracturing (enhancement)	M15
Removal	E0
Slurry walls/underground barriers	I2
Slurry-phase bioremediation	H13
Soil washing	N15
Soil vapor treatment	K1
Soil vapor extraction	M11
Soil flushing	M12
Solidification/stabilization	N11
Solvent extraction	N17
Thermal desorption	N12
Thermally enhanced SVE	M14
UV oxidation	F21
Vitrification	M13
Waste removal—liquids	Q1
Waste removal—solids (non-soil)	S1
Waste removal—soils	E1
Waste removal—sludges	R1
Waste removal—drums, tanks, bulk containers	J1

RMIS--Legal Agreements Table

FIELD NAME	TYPE	SIZE	DESCRIPTION
FFID (ffid)	CHAR	12	Unique federal facility identification number. Detailed definition of the FFID is on page 1.
Site Name (sitename)	CHAR	10	Unique name given to a distinct area on an installation. Detailed definition of a Site Name is on page 7.
Legal Driver (lgl_drvr)	CHAR	1	Most significant applicable legal driver for the site. (the driver that most significantly impacts site activities)

Legal Driver	Code
Federal Facility Agreements at NPL Installations	A
Interagency Agreements (2&3 party) at non-NPL Installations	B
RCRA Permits with Corrective Action Requirements	C
RCRA Corrective Action Orders (issued by EPA or a state)	D
Consent Orders under state laws	E
Memoranda of Understanding commitments	F
Memoranda of Agreement commitments (e.g., DSMOA)	G
Notice of Violation Requirements	H
ATSDR related requirements (e.g., response to health advisory)	I
Natural Resource Trustee related requirements claim (e.g., damage claim)	J
Court ordered requirements (in cases of litigation)	K
Imminent threats	L
Consent Decrees (usually for third party sites)	M
Unilateral Orders (usually for third party sites)	N
Preliminary Assessments of installations listed on the Docket	O
Long-term Operation/Monitoring for in-place systems for installations without agreements	P
State laws and regulations requiring a response within a specified period	Q
Congressional/Owner Concern (FUDS only)	R
Building Demo/Debris Removal (FUDS only)	S
Ordnance and Explosive Waste RAC 1-2 (FUDS only)	T
Ordnance and Explosive Waste RAC 3-4 (FUDS only)	U
No Legal Driver	Z

Cleanup Milestone (milestone)	CHAR	2	Enter the most recent milestone accomplished using the following list.

Milestone	Code
Statement of Work	1
RI/FS Work Plan/Sampling and Analysis Plan	2
Community Relations Plan	3
Engineering Evaluation/Cost Analysis	4
Action Memorandum for a Removal Action	5
RI/RFI Report	6
FS/CMS Report	7
Proposed Plan	8
ROD/Corrective Action Decision Document	9
60% Remedial Design	10
Final Remedial Design	11
Remedial Action Plan (including O&M Plans and Remedial Action Schedules)	12
Treatability Studies	13
Remedial Action Start	14
Remedial Action Underway	15
Remedial Action Complete	16

FIELD NAME	TYPE	SIZE	DESCRIPTION
Penalty Description (penalty)	CHAR	1	Enter one of the following codes to identify the site's stipulated penalty status. A - Stipulated penalties assessed N - Stipulated penalties not assessed D - Stipulated penalties in dispute
Penalty Amount (penamt)	NUM	10	Enter the dollar amount of the penalty.
Agreement Impact (agrimpact)	CHAR	4	Reason agreement schedule is affected. TECH—Technical CONT—Contracting PERS—Personnel REG—Regulatory FUND—Funding

RMIS--Restoration Advisory Board (RAB) Information Table

FIELD NAME	TYPE	SIZE	DESCRIPTION
FFID (ffid)	CHAR	12	Unique federal facility identification number. Detailed definition of the FFID is on page 1.
Date RAB Established (rab_est)	NUM	6	The month and year (in the format " YYYYMM", that is 199501 for January 1995) in which the restoration advisory board (RAB) was established at the installation. A RAB is considered established when the community co-chair has been selected and the first meeting involving community members has been held.
RAB Not Needed (rab_none)	CHAR	1	Code indicating that a RAB is not needed for one of the following reasons: A Installation located in remote area, no affected community B Commander or other DoD Component official has determined that a RAB is not needed C No sufficient, sustained community interest in a RAB has been expressed by the community D Lack of outstanding cleanup issues or activities does not warrant establishment of a RAB E Installation or tenant activity is supported by another RAB F DoD does not have cleanup lead at site (e.g., FUDS) G Installation has not attempted to establish a RAB
RAB Community Representation (rabcommrep)	CHAR	7	RAB has members from the following segments of community. List code for all that apply: A Local residents/community members B Installation residents C Local environmental groups/activists D Business community E Low income and minority F Local government officials G Other
RAB Activity (rab_act)	CHAR	9	Has the RAB done the following? Code all that apply: A Reviewed plans and technical documents B Provided comments or advice C Received training D Established operating procedures E Participated in or reviewed site relative risk evaluations F Provided advice that affected scope or schedule of studies/cleanup G Improved installation credibility H Established partnerships among stakeholders I Developed " how to" information or lessons learned
RAB_Advice (rab_adv)	CHAR	8	In what areas has your RAB provided advice? Code all that apply: A Scope of studies B Work plan priorities C Site priorities D Relative risk evaluation E Remedy selection F Study or cleanup schedule G Future land use H Other

FIELD NAME	TYPE	SIZE	DESCRIPTION
Past FY Expenditures (past_fy)	NUM	6	Funds expended on RABs in the past FY. RAB expenses includes those costs which are directly related to the operation of RAB such as: RAB establishment, member selection costs, training, meeting announcements, meeting logistics, facilitators, preparation of meeting agendas, materials and minutes, and document reproduction for RAB members. Do not include general community involvement expenses such as preparation of fact sheets or other information materials for public distribution, mailings, or repository costs. Include contract support expenses; do not include salaries for DoD personnel.
RAB Technical Assistance (tech_funds)	NUM	6	Amount of independent technical assistance funds provided to communities for past FY.

RMIS--Cost-to-Complete Table

FIELD NAME	TYPE	SIZE	DESCRIPTION
FFID (ffid)	CHAR	12	Unique federal facility identification number. Detailed definition of the FFID is on page 1.
Site Name (sitename)	CHAR	10	Unique name given to a distinct area on an installation. Detailed definition of Site Name is on page 7.
Phase (phase)	CHAR	5	Code for phase of cleanup. Detailed definition is on page 9.
Prior Year (py)	NUM	7	Dollar value of the prior FY obligations at the site.
CY (cy)	NUM	7	Dollar value of the current FY program at site as appropriated in thousands.
BY (by)	NUM	7	Dollar value of the BY program at site as appropriated in thousands.
BY+1 (by+l)	NUM	7	Dollar value of the budget year (BY+1) program at site.
BY+2 (by+2)	NUM	7	Dollar value of the budget year (BY+2) program at site.
BY+3 (by+3)	NUM	7	Dollar value of the outyear (BY+3) program at site in thousands.
BY+4 (by+4)	NUM	7	Dollar value of the outyear (BY+4) program at site in thousands.
BY+5 (by+5)	NUM	7	Dollar value of the outyear (BY+5) program at site in thousands.
Site Cost To Complete (ctc)	NUM	10	Dollar value of the cost to complete (BY+6 to complete) at site in thousands.
Group (group)	CHAR	I	Identifies group for the IRP Category in accordance with Management Guidance. a = program management and support b = hazardous and petroleum waste c = ordinance and explosive waste
Appropriation (appro)	CHAR	6	Abbreviation for the funding appropriation. MILCON: Military Construction O&M Operations and Maintenance PROC AMMO: Ammunition Procurement OPA: Other Proc, Army OPN: Other Proc, Navy MPAF: Missile Procurement, Air Force APAF: Aircraft Procurement, Air Force OPAF: Other Proc, Air Force OTHER: Any other funding source
Budget Activity (bud_act)	CHAR	1	Budget activity code: Identifies specific categories of support, equipment and programs within an appropriation.
Program Element (pe_no)	CHAR	8	Service specific program element code.

RMIS—Site Relative Risk Table

FIELD NAME	TYPE	SIZE	DESCRIPTION
FFID (ffid)	CHAR	12	Unique federal facility identification number. Detailed definition of the FFID is on page 1.
Site Name (sitename)	CHAR	10	Unique name given to a distinct area on an installation. Detailed definition of Site Name is on page 7.
Site Relative Risk Category (site_rr)	CHAR	1	Highest of the 6 possible media relative risk categories and the "controlling" relative risk for the site ("H" = high, "M" = medium, "L" = low, "N" not evaluated). Note: Validation for this category requires media and contaminant backup data derived from the table entries described on pages 18 and 19.

RMIS--Site Relative Risk--Media Table

This information is required to support Site Relative Risk Category. (page 17)

FIELD NAME	TYPE	SIZE	DESCRIPTION
FFID (ffid)	CHAR	12	Unique federal facility identification number. Detailed definition of the FFID is on page 1.
Site Name (sitename)	CHAR	10	Unique name given to a distinct area on an installation. Detailed definition of Site Name is on page 7.
Media (media)	CHAR	2	Media is one of six possible medias of concern per site: groundwater, soil, surface water (human), surface water (ecological), sediment (human), sediment (ecological). (GW = groundwater, SL = soil, WH = surface water (human), WE = surface water (ecological), SH = sediment (human), SE = sediment (ecological)). Each media will be evaluated for CHF, MPF and RF and the media relative risk category determined.
Contamination Hazard Factor (chf)	CHAR	12	Describing the media contaminant hazard factor (CHF) is the aggregate sum of all contaminant ratios reported as SIGNIFICANT if total ratio (TR) is greater than 100, moderate if TR is 2-100, and MINIMAL if TR < 2.
Ratio Total (ratio_t)	NUM	6.2	Sum of all site contaminant ratios for chemicals of concern.
Migration Pathway Factor (mpf)	CHAR	12	The media migration pathway factor (MPF) is determined by the evaluator(s) on the basis of professional judgment and consideration of available site information and is reported as EVIDENT, POTENTIAL or CONFINED. Definitions are found in the Relative Risk Site Evaluation Primer.
MPF Rationale (mpf_rat)	CHAR	254	Narrative of the rationale supporting the migration Pathway Factor (relates to MPF).
Receptor Factor (rf)	CHAR	3	The media receptor factor (RF) is determined by the evaluators on the basis of professional judgment and available site and media information and is reported as IDENTIFIED, POTENTIAL or LIMITED. Both human and ecological receptors are considered. Further details are found in the Primer.
RF Rationale (rf_rat)	CHAR	254	Narrative of the rationale supporting the Receptor factor (relates to RF).
Media Relative Risk Category (media_rr)	CHAR	1	The relative risk category for the media determined by applying the media CHF, MPF and RF according to directions in the Primer (" H" = High, " M" = medium, " L" = low, " N" = not evaluated). Note: Validation for this category requires contaminant backup data derived from the table entries described on page 19.

This information required to support Site and Media Relative Risk Categories. (pages 17 and 18)

FIELD NAME	TYPE	SIZE	DESCRIPTION
FFID (ffid)	CHAR	12	Unique federal facility identification number. Detailed definition of th FFID is on page 1.
Site Name (sitename)	CHAR	10	Unique name given to a distinct area on an installation. Detailed definition of site name is on page 7.
Media (media)	CHAR	2	Media is one of six possible medias of concern per site: groundwater, s surface water (human), surface water (ecological), sediment (human), sediment (ecological). (GW = groundwater, SL = soil, WH = surface w (human), WE = surface water (ecological). SH = sediment (human), SE = sediment (ecological)). Each media will be evaluated for CHF, MPF an and the media relative risk category determined.
Chemical Name (chemical)	CHAR	54	The complete chemical name as found in the DoD contaminant master t
CAS Number (cas_no)	CHAR	10	The Chemical Abstract System (CAS) registry numbers associated witl chemical name and listed in the DoD contaminant master table. Leave blank if no CAS associated with chemical.
Concentration (conc)	CHAR	10	Highest concentration detected for chemical in specific media.
Unit of Measure Chemical (unit)	CHAR	6	Unit of measure associated with media or substance (soil = mg/kg, wat ug/l, radionuclides = pCi/kg, fresh water = ug/l, sediment = ppm) indic in the DoD contaminant master table.